عنوان مقاله:

Cell Cycle Arrest Induction by Chrysin Encapsulated in PLGA-PEG Nanoparticles in the Breast Cancer Cell Line

محل انتشار:

یازدهمین کنگره بین المللی سرطان پستان (سال: 1394)

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خلاصه مقاله:

Introduction: Cancer is becoming one of the most public health problems in the world. Chrysin is a natural flavonoid which has been reported to have some significant biological effects on the processes of chemical defense, nitrogen fixation, inflammation, and oxidation. In this study, the chrysin, were encapsulated into poly (D, L-lactic-co-glycolic acid) poly (ethylene glycol) (PLGA-PEG) nanoparticles for local treatment. Methods: PLGA-PEG copolymers were synthesized by ring-opening polymerization. The bulk addition, the resulting particles were characterized by SEM. Chrysin effect on different genes of breast cancer was analyzed by Quantitative PCR. Results: The chrysin encapsulation efficiency achieved for polymeric nanoparticles was 70% control of release kinetics. The cytotoxicity of different concentration of pure chrysin and chrysin loaded in PLGA-PEG (5-640μM) on T47-D breast cancer cell line was analyzed and results showed that chrysin could decreased cyclin D1 levels but Nano chrysin (74μM) down regulated cyclin D1 mRNA up to 80%. Discussion & Conclusion: In parallel with this study Manika and colleague shown that chrysin arrest the cell cycle and reduce cyclin D1 expression in skin cancer. Also, there is potential for use of these nanoparticles for biomedical applications. Future work should include in vivo investigation of the targeting capability and effectiveness of these nanoparticles in the treatment of breast cancer. In conclusion, the nano-chrysin therapy developed is a novel method that could increase cytotoxicity to cancer cells without damaging the normal cells, and would be promising in breast cancer therapy.

کلمات کلیدی:

Breast Cancer, Cyclin, Flavonoid, Gene Expression